

Attorney Docket No.: ISPH-0524  
Inventors: Bennett  
Serial No.: 09/734,847  
Filing Date: December 12, 2000  
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The following listing of claims will replace all prior versions and listings of claims in this application.

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Listing of Claims:

*P* Claim 1 (currently amended): A method of controlling the behavior of a cell through modulation of the processing of a selected wild-type mRNA target within said cell, said method comprising binding to said target an antisense compound having at least one 2'guanidinium, 2'carbamate, 2'aminooxy, 3'methylene phosphonate, peptide nucleic acid having at least one lysine residue at its C-terminus, or peptide nucleic acid having at least one arginine residue at its C-terminus which is specifically hybridizable with said mRNA target and which does not elicit cleavage of the mRNA target upon binding, so that processing of said mRNA target is modulated and said behavior is controlled.

Claim 2 (original): The method of claim 1 wherein said modulation of the processing of a selected wild-type mRNA target is modulation of splicing of said mRNA target.

Claim 3 (canceled).

Claim 4 (re-presented - formerly dependent claim 3) The method of claim ~~3~~ 1 wherein said antisense compound comprises a 2'-guanidinium, ~~2'-acetamide,~~ 2'-carbamate, ~~2'-~~

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~~dimethylaminoethoxyethoxy,~~ 3'methylene phosphonate, or 2'-  
aminooxy modification on substantially every sugar.

Claim 5 (original): The method of claim 4 wherein said antisense compound comprises at least one phosphorothioate backbone linkage.

Claim 6 (original): The method of claim 1 wherein said antisense compound is an antisense oligonucleotide.

Claim 7 (original): The method of claim 2 wherein said modulation of splicing is a redirection of splicing.

Claim 8 (original): The method of claim 2 wherein said modulation of splicing results in an altered ratio of splice products.

Claim 9 (original): The method of claim 2 wherein said modulation of splicing results in exclusion of one or more exons from the mature mRNA.

Claim 10 (original): The method of claim 9 wherein said antisense compound is targeted to at least a portion of an exon to be excluded.

Claim 11 (original): The method of claim 10 wherein said antisense compound is targeted to an intron-exon junction.

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Claim 12 (original): The method of claim 7 wherein said antisense compound is targeted to at least a portion of a region up to 50 nucleobases upstream from a 5' splice site.

Claim 13 (original): The method of claim 12 wherein said redirection of splicing is a decreased frequency of use of said 5' splice site.

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Claim 14 (re-presented - formerly dependent claim 1): ~~The method of claim 1~~ A method of controlling the behavior of a non-viral cell through modulation of polyadenylation of a selected wild-type mRNA target within said cell, said method comprising binding to said mRNA target an antisense compound having at least one 2'guanidinium, 2'carbamate, 2'aminooxy, 3'methylene phosphonate, peptide nucleic acid having at least one lysine residue at its C-terminus, or peptide nucleic acid having at least one arginine residue at its C-terminus and which is specifically hybridizable with said mRNA target so that polyadenylation of said mRNA target is modulated and said behavior is controlled wherein said processing of a selected mRNA target is polyadenylation of said mRNA target.

Claim 15 ((re-presented - formerly dependent claim 1): ~~The method of claim 1~~ A method of controlling the behavior of a non-

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viral cell through modulation of processing of a selected wild-type mRNA target within said cell, said method comprising binding to said mRNA target an antisense compound having at least one 2'guanidinium, 2'carbamate, 2'aminooxy, 3'methylene phosphonate, peptide nucleic acid having at least one lysine residue at its C-terminus, or peptide nucleic acid having at least one arginine residue at its C-terminus and which is specifically hybridizable with a polyadenylation signal or polyadenylation site so that processing of said mRNA target is modulated and said behavior is controlled wherein said antisense compound is targeted to a polyadenylation signal or polyadenylation site.

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Claim 16 (original): The method of claim 1 wherein said processing of a selected wild-type cellular mRNA target is regulating stability of said mRNA target, by targeting said antisense compound to a sequence which controls stability of said mRNA target.

Claims 17-30 (canceled).

Claim 31 (original): The method of claim 8, wherein said altered ratio of splice products results from an increase or a decrease in the amount of a splice product encoding a membrane form of a protein relative to a soluble form of a protein.

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Claim 32 (original): The method of claim 31 wherein said protein is a receptor.

Claim 33 (original): The method of claim 32, wherein said receptor is a hormone of cytokine receptor.

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